

WHAT IS CLAIMED IS:

- 1 1. A reflective pavement marker comprising:
 - 2 a shell having at least one side wall having a reflective portion, wherein
 - 3 said shell forms an interior cavity, said reflective portion having an inner
 - 4 surface partially defining said cavity, said shell formed of a polymer selected
 - 5 from the group consisting of polyacrylate and polycarbonate, said polymer
 - 6 having a tensile strength of greater than 9,000 pounds per square inch and a
 - 7 ratio of tensile strength to flexural modulus of between 0.021-0.050:1;
 - 8 a reflective coating covering said inner surface of said reflective
 - 9 portion;
- 10 a bonding coating covering at least said reflective coating; and
- 11 a filler material disposed within the interior cavity of said shell.

- 1 2. A reflective pavement marker as set forth in claim 1 wherein the
- 2 tensile strength of said polymer is greater than 10,000 pounds per square inch.

- 1 3. A reflective pavement marker as set forth in claim 1 wherein
- 2 said polymer has an optical transmittance greater than 85%.

- 1 4. A reflective pavement marker as set forth in claim 1 wherein
- 2 said polymer is a polyacrylate.

1 5. A reflective pavement marker as set forth in claim 4 wherein
2 said polymer comprises methyl methacrylate.

1 6. A reflective pavement marker as set forth in claim 4 wherein
2 said polymer is a poly(ethyl acrylate/methyl methacrylate).

1 7. A reflective pavement marker as set forth in claim 1 wherein
2 said shell includes a top wall, side wall and reflective end wall with reflective
3 portion that are integral and formed as one piece.

1 8. A reflective pavement marker as set forth in claim 1 wherein
2 said reflective portion includes a plurality of integrally formed cube-shaped
3 members arranged in a grid pattern.

1 9. A reflective pavement marker as set forth in claim 1 wherein
2 said reflective coating is a metal material.

1 10. A reflective pavement marker as set forth in claim 1 wherein
2 said bonding coating is a bonding primer.

1 11. A reflective pavement marker as set forth in claim 10 wherein
2 said bonding primer is an acrylic latex primer.

1 12. A reflective pavement marker as set forth in claim 10 wherein
2 said bonding primer is a water based primer.

1 13. A reflective pavement marker comprising:
2 a shell having at least one side wall having a reflective portion, wherein
3 said shell defines an interior cavity, and said reflective portion and said shell
4 are integral and formed as one piece, said shell formed of a polymer selected
5 from the group consisting of polyacrylate and polycarbonate, said polymer
6 having a tensile strength of greater than 9,000 pounds per square inch and a
7 ratio of tensile strength to flexural modulus of between 0.026-0.050:1;
8 wherein said reflective portion includes a plurality of integrally formed
9 cube-shaped members arranged in a grid pattern on an inner surface;
10 a reflective coating covering said inner surface of said reflective portion,
11 wherein said reflective coating is a metal material;
12 a bonding coating covering said reflective coating to prevent separation
13 of said reflective coating from said reflective portion, wherein said bonding
14 coating is a bonding primer; and
15 a filler material disposed within said cavity of said shell.

1 14. A reflective pavement marker as set forth in claim 13 wherein
2 the tensile strength of said polymer is greater than 10,000 pounds per square
3 inch.

1 15. A reflective pavement marker as set forth in claim 13 wherein
2 said polymer has an optical transmittance greater than 85%.

1 16. A reflective pavement marker as set forth in claim 13 wherein
2 said polymer is a polyacrylate.

1 17. A reflective pavement marker as set forth in claim 16 wherein
2 said polymer comprises methyl methacrylate.

1 18. A reflective pavement marker as set forth in claim 16 wherein
2 said polymer is a poly(ethyl acrylate/methyl methacrylate).

1 19. A reflective pavement marker as set forth in claim 13 wherein
2 said bonding primer is an acrylic latex primer.

1 20. A method of forming a reflective pavement marker, said method
2 comprising the steps of:

3 forming a shell having at least one reflective portion with an inner
4 surface wherein the shell forms an interior cavity, said shell formed of a
5 polymer selected from the group consisting of polyacrylate and polycarbonate,
6 said polymer having a tensile strength of greater than 9,000 pounds per square
7 inch and a ratio of tensile strength to flexural modulus of between 0.021-
8 0.050:1;

9 coating said inner surface with a metal material;
10 covering at least said metal material with a bonding compound; and
11 filling the cavity of the shell with a filler material.

1 21. A reflective pavement marker as set forth in claim 20 wherein
2 the tensile strength of said polymer is greater than 10,000 pounds per square
3 inch.

1 22. A reflective pavement marker as set forth in claim 20 wherein
2 said polymer has an optical transmittance greater than 85%.

1 23. A reflective pavement marker as set forth in claim 20 wherein
2 said polymer is a polyacrylate.

1 24. A reflective pavement marker as set forth in claim 20 wherein
2 said polymer comprises methyl methacrylate.

1 25. A reflective pavement marker as set forth in claim 20 wherein
2 said polymer is a poly(ethyl acrylate/methyl methacrylate).